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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/762,535	SUH ET AL.	
	Examiner	Art Unit	
	ADAM R. GIESY	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,14-16,18-20,28-30,32-34,42,57,58,60-62 and 70-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,14-16,18-20,28-30,32-34,42,57,58,60-62 and 70-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 December 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 2, 4, 5, 6, 1, 29, 30, 32, 33, 34, 42, 57, 58, 60, 61, 62, and 70 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 71-88 respectively of copending Application No. 12/222445. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The patent claims include all of the limitations of the instant application claims, respectively. The patent claims also include additional limitations. Hence, the instant application claims are generic to the species of invention covered by the respective patent claims. As such, the instant application claims are anticipated by the patent claims and are therefore not patentably distinct therefrom. (See Eli Lilly and Co. v. Barr Laboratories Inc., 58 USPQ2D 1869, "a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim", *In re Goodman*, 29 USPQ2d 2010, "Thus, the generic invention is 'anticipated' by the species of the

patented invention" and the instant "application claims are generic to species of invention covered by the patent claim, and since without terminal disclaimer, extant species claims preclude issuance of generic application claims").

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1, 15, 29, and 57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19, 24, 28, and 9 respectively of copending Application No. 10/762538. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The patent claims include all of the limitations of the instant application claims, respectively. The patent claims also include additional limitations. Hence, the instant application claims are generic to the species of invention covered by the respective patent claims. As such, the instant application claims are anticipated by the patent claims and are therefore not patentably distinct therefrom. (See Eli Lilly and Co. v. Barr Laboratories Inc., 58 USPQ2D 1869, "a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim", *In re Goodman*, 29 USPQ2d 2010, "Thus, the generic invention is 'anticipated' by the species of the patented invention" and the instant "application claims are generic to species of invention covered by the patent claim, and since without terminal disclaimer, extant species claims preclude issuance of generic application claims").

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1, 29, and 57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 9, and 17 respectively of copending Application No. 11/898040. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

The patent claims include all of the limitations of the instant application claims, respectively. The patent claims also include additional limitations. Hence, the instant application claims are generic to the species of invention covered by the respective patent claims. As such, the instant application claims are anticipated by the patent

claims and are therefore not patentably distinct therefrom. (See Eli Lilly and Co. v. Barr Laboratories Inc., 58 USPQ2D 1869, "a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim", *In re Goodman*, 29 USPQ2d 2010, "Thus, the generic invention is 'anticipated' by the species of the patented invention" and the instant "application claims are generic to species of invention covered by the patent claim, and since without terminal disclaimer, extant species claims preclude issuance of generic application claims").

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 15, 16, 29, 30, 57, 58, and 71-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minamino et al. (hereinafter Minamino – US Doc. No. 20030007432) in view of Deng (USPN 5892797).

Regarding claim 1, Minamino discloses a computer-readable recording medium, comprising: an information area, the information area including a first region for a main data, and a second region for control information required for recording or reproduction of the main data and a bi-phased modulation data required for reproducing the control information or the main data (see pages 24-25, paragraphs 0395-0403), said control information being encoded as wobble pits, wherein the bi-phased modulation data is recorded along with a wobble pattern of the wobble pits in such a manner that bit 0 and bit 1 are determined respectively depending on a direction of a transition of the wobble

pattern within a predetermined period (see page 25, paragraphs 0402-0404). Minamino does not specifically disclose that the transition found in the bi-phase modulated data occurs in the middle of the predetermined period.

Deng discloses a Manchester Encoding scheme wherein each bit is determined by a transition of the signal from high to low or low to high in the middle of a predetermined period (see column 3, lines 16-30; see also Figure 1 – note the lines labeled 'Data', 'Trace 101a', and 'Trace 101b'. Examiner notes that 'Trace 101a' shows an example where a transition from high to low in the middle of the period equals a bit '0' whereas the opposite yields a bit '1'. 'Trace 101b' shows the reverse concept.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information required for recording or reproducing main data as disclosed by Minamino with the Manchester Encoding scheme of bi-phase modulation as disclosed by Deng, the motivation being to provide accurate identification of control information with added copyright protection.

Regarding claim 2, Minamino and Deng disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Minamino further discloses that the control information is in the lead-in zone of the information area of the recording medium (page 24, paragraph 0395).

Regarding claim 15, Minamino discloses a method of forming a recording medium, comprising: forming a first region for storing a main data; forming a second region for control information required for recording or reproduction of the main data and a bi-phase modulation data required for reproducing the control information or the main

data (see pages 24-25, paragraphs 0395-0403); and encoding the control information as wobble pits, wherein the bi-phased modulation data is recorded along with a wobble pattern of the wobble pits in such a manner that bit 0 and bit 1 are determined respectively depending on a direction of a transition of the wobble pattern within a predetermined period (see page 25, paragraphs 0402-0404). Minamino does not specifically disclose that the transition found in the bi-phase modulated data occurs in the middle of the predetermined period.

Deng discloses a Manchester Encoding scheme wherein each bit is determined by a transition of the signal from high to low or low to high in the middle of a predetermined period (see column 3, lines 16-30; see also Figure 1 – note the lines labeled 'Data', 'Trace 101a', and 'Trace 101b'. Examiner notes that 'Trace 101a' shows an example where a transition from high to low in the middle of the period equals a bit '0' whereas the opposite yields a bit '1'. 'Trace 101b' shows the reverse concept.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information required for recording or reproducing main data as disclosed by Minamino with the Manchester Encoding scheme of bi-phase modulation as disclosed by Deng, the motivation being to provide accurate identification of control information with added copyright protection.

Regarding claim 16, Minamino and Deng disclose all of the limitations of claim 15 as discussed in the claim 15 rejection above. Minamino further discloses that the second region for said control information is in a lead-in zone of the information area of the recording medium (page 24, paragraph 0395).

Regarding claim 29, Minamino discloses a method of reproducing data from a recording medium, comprising: utilizing control information required for reproduction of a main data, to reproduce the data and a bi-phased modulation data required for reproducing the control information or the main data, the control information being encoded as wobbled pits wherein the bi-phased modulation data is recorded along with a wobble pattern of the wobbled pits in such a manner that bit 0 and bit 1 are determined respectively depending on a direction of a transition of the wobble pattern within a predetermined period, wherein one of the bit 0 and the bit 1 is represented by only one transition from high to low in a middle within the predetermined period (see pages 24-25, paragraphs 0394-0402), and wherein the utilizing step includes a step of decoding the control information by a demodulation method (page 25, paragraph 0403). Minamino does not specifically disclose that the transition found in the bi-phase modulated data occurs in the middle of the predetermined period.

Deng discloses a Manchester Encoding scheme wherein each bit is determined by a transition of the signal from high to low or low to high in the middle of a predetermined period (see column 3, lines 16-30; see also Figure 1 – note the lines labeled ‘Data', ‘Trace 101a’, and ‘Trace 101b’. Examiner notes that 'Trace 101a' shows an example where a transition from high to low in the middle of the period equals a bit ‘0’ whereas the opposite yields a bit ‘1’. 'Trace 101b’ shows the reverse concept.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information required for recording or reproducing main data as disclosed by Minamino with the Manchester Encoding

scheme of bi-phase modulation as disclosed by Deng, the motivation being to provide accurate identification of control information with added copyright protection.

Regarding claim 30, Minamino and Deng disclose all of the limitations of claim 29 as discussed in the claim 29 rejection above. Minamino further discloses that the control information is recorded in a lead-in zone of the information area of the recording medium (page 24, paragraph 0395), and wherein the utilizing step includes a step of reading the control information in the lead-in zone (page 25, paragraph 0403).

Regarding claim 57, Minamino discloses an apparatus for reproducing data from a recording medium, comprising: a signal detector (Figure 39, element 802) to detect control information required for reproduction of a main data, to reproduce the data, and a bi-phased modulation data required for reproducing the control information or the main data, the control information being encoded as wobble pits, wherein the bi-phased modulation data is recorded along with a wobble pattern of the wobbled pits in such a manner that bit 0 and bit 1 are determined respectively depending on a direction of a transition of the wobble pattern within a predetermined period (see pages 24-25, paragraphs 0394-0402); and a signal processor, coupled to the signal detector, to decode the control information by a demodulation method (Figure 39, elements 812 and 814). Minamino does not specifically disclose that the transition found in the bi-phase modulated data occurs in the middle of the predetermined period.

Deng discloses a Manchester Encoding scheme wherein each bit is determined by a transition of the signal from high to low or low to high in the middle of a predetermined period (see column 3, lines 16-30; see also Figure 1 – note the lines

labeled ‘Data', ‘Trace 101a’, and ‘Trace 101b’. Examiner notes that 'Trace 101a' shows an example where a transition from high to low in the middle of the period equals a bit ‘0’ whereas the opposite yields a bit ‘1’. 'Trace 101b’ shows the reverse concept.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information required for recording or reproducing main data as disclosed by Minamino with the Manchester Encoding scheme of bi-phase modulation as disclosed by Deng, the motivation being to provide accurate identification of control information with added copyright protection.

Regarding claim 58, Minamino and Deng disclose all of the limitations of claim 57 as discussed in the claim 57 rejection above. Minamino further discloses that the control information is recorded in a lead-in zone of the information area of the recording medium, and wherein the signal detector detects the control information in the lead-in zone (page 24, paragraph 0395; see also Figure 39 – note wobble signal going to element 812).

Regarding claim 71, Minamino and Deng disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Minamino further discloses that the control information is reproducible only when the bi-phased modulation data is detected normally (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the bi-phase modulation is the method by which the data is encoded. Thus, if an error occurs while reading the bi-phase modulated data, then an error will be read into the control information).

Regarding claim 72, Minamino and Deng disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Minamino further discloses that the main data is reproducible only when the control information is reproduced by the bi-phased modulation data (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the control information can include an encryption key for decrypting the main data. Thus, if an error occurs while reading the encryption key, then the main data will not be decrypted using the correct decryption key, and will not by legible).

Regarding claim 73, Minamino and Deng disclose all of the limitations of claim 15 as discussed in the claim 15 rejection above. Minamino further discloses that the control information is reproducible only when the bi-phased modulation data is detected normally (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the bi-phase modulation is the method by which the data is encoded. Thus, if an error occurs while reading the bi-phase modulated data, then an error will be read into the control information).

Regarding claim 74, Minamino and Deng disclose all of the limitations of claim 15 as discussed in the claim 15 rejection above. Minamino further discloses that the main data is reproducible only when the control information is reproduced by the bi-phased modulation data (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the control information can include an encryption key for decrypting the main data. Thus, if an error

occurs while reading the encryption key, then the main data will not be decrypted using the correct decryption key, and will not by legible).

Regarding claim 75, Minamino and Deng disclose all of the limitations of claim 29 as discussed in the claim 29 rejection above. Minamino further discloses that the control information is reproducible only when the bi-phased modulation data is detected normally (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the bi-phase modulation is the method by which the data is encoded. Thus, if an error occurs while reading the bi-phase modulated data, then an error will be read into the control information).

Regarding claim 76, Minamino and Deng disclose all of the limitations of claim 29 as discussed in the claim 29 rejection above. Minamino further discloses that the main data is reproducible only when the control information is reproduced by the bi-phased modulation data (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the control information can include an encryption key for decrypting the main data. Thus, if an error occurs while reading the encryption key, then the main data will not be decrypted using the correct decryption key, and will not by legible).

Regarding claim 77, Minamino and Deng disclose all of the limitations of claim 57 as discussed in the claim 57 rejection above. Minamino further discloses that the control information is reproducible only when the bi-phased modulation data is detected normally (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the bi-phase modulation is

the method by which the data is encoded. Thus, if an error occurs while reading the bi-phase modulated data, then an error will be read into the control information).

Regarding claim 78, Minamino and Deng disclose all of the limitations of claim 57 as discussed in the claim 57 rejection above. Minamino further discloses that the main data is reproducible only when the control information is reproduced by the bi-phased modulation data (see page 24, paragraph 0395 and page 25, paragraph 0403 – Examiner asserts that this is inherently disclosed by Minamino since the control information can include an encryption key for decrypting the main data. Thus, if an error occurs while reading the encryption key, then the main data will not be decrypted using the correct decryption key, and will not by legible).

7. Claims 4-6, 20, 32-34, and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minamino et al. (hereinafter Minamino – US Doc. No. 20030007432) in view of Deng (USPN 5892797) in view of Applicant Admitted Prior Art (hereinafter AAPA).

Regarding claim 4, Minamino and Deng disclose all of the limitations of claim 2 as discussed in the claim 2 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 5, Minamino, Deng, and AAPA disclose all of the limitations of claim 4 as discussed in the claim 4 rejection above. Deng further discloses that the bit 0 is represented by the transition from low to high in the middle within the predetermined period, while the bit 1 is represented by the transition from high to low in the middle within the predetermined period (see Figure 1, 'Trace 101b').

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 6, Minamino and Deng disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 20, Minamino and Deng disclose all of the limitations of claim 15 as discussed in the claim 15 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 32, Minamino and Deng disclose all of the limitations of claim 30 as discussed in the claim 30 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 33, Minamino, Deng, and AAPA disclose all of the limitations of claim 32 as discussed in the claim 32 rejection above. Deng further discloses that the bit 0 is represented by the transition from low to high in the middle within the predetermined period, while the bit 1 is represented by the transition from high to low in the middle within the predetermined period (see Figure 1, 'Trace 101b').

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry

standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 34, Minamino and Deng disclose all of the limitations of claim 29 as discussed in the claim 29 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 60, Minamino and Deng disclose all of the limitations of claim 58 as discussed in the claim 58 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 61, Minamino, Deng, and AAPA disclose all of the limitations of claim 60 as discussed in the claim 60 rejection above. Deng further discloses that the bit 0 is represented by the transition from low to high in the middle within the predetermined period, while the bit 1 is represented by the transition from high to low in the middle within the predetermined period (see Figure 1, 'Trace 101b').

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

Regarding claim 62, Minamino and Deng disclose all of the limitations of claim 57 as discussed in the claim 57 rejection above. Minamino discloses that the control information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices.

8. Claims 14, 28, 42, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minamino et al. (hereinafter Minamino – US Doc. No. 20030007432) in view of Deng (USPN 5892797) in view of Gotohet al. (hereinafter Gotoh – US Doc No. 20020089920).

Regarding claim 14, Minamino and Deng disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Minamino and Deng both fail to disclose the recording medium wherein the information area further includes a third region storing identification information to identify the presence or absence of the control information.

Gotoh et al. discloses a computer-readable recording medium including control information recorded in a control data area (see Figures 30A and 30C), and a particular region containing identification information to identify the presence or absence of the control information (see Figure 30A - note stripe presence/absence identifier 937; see

also paragraphs 0242-0245) for the purpose of monitoring the amount of available space to which more control data may be recorded.

It would have been obvious to one of ordinary skill in the art to combine the recording of control information in the lead-in as disclosed by Minamino with the Manchester Encoding scheme as disclosed by Deng, and the recording of information indicating the presence of control information as disclosed by Gotoh, the motivation being to decrease delay time for playback by shortening the reproduction of the control information.

Regarding claim 28, Minamino and Deng disclose all of the limitations of claim 15 as discussed in the claim 15 rejection above. Minamino and Deng both fail to disclose the recording medium wherein the information area further includes a third region storing identification information to identify the presence or absence of the control information.

Gotoh et al. discloses a computer-readable recording medium including control information recorded in a control data area (see Figures 30A and 30C), and a particular region containing identification information to identify the presence or absence of the control information (see Figure 30A - note stripe presence/absence identifier 937; see also paragraphs 0242-0245) for the purpose of monitoring the amount of available space to which more control data may be recorded.

It would have been obvious to one of ordinary skill in the art to combine the recording of control information in the lead-in as disclosed by Minamino with the Manchester Encoding scheme as disclosed by Deng, and the recording of information

indicating the presence of control information as disclosed by Gotoh, the motivation being to decrease delay time for playback by shortening the reproduction of the control information.

Regarding claim 42, Minamino and Deng disclose all of the limitations of claim 29 as discussed in the claim 29 rejection above. Minamino and Deng both fail to disclose the recording medium wherein the information area further includes a third region storing identification information to identify the presence or absence of the control information.

Gotoh et al. discloses a computer-readable recording medium including control information recorded in a control data area (see Figures 30A and 30C), and a particular region containing identification information to identify the presence or absence of the control information (see Figure 30A - note stripe presence/absence identifier 937; see also paragraphs 0242-0245) for the purpose of monitoring the amount of available space to which more control data may be recorded.

It would have been obvious to one of ordinary skill in the art to combine the recording of control information in the lead-in as disclosed by Minamino with the Manchester Encoding scheme as disclosed by Deng, and the recording of information indicating the presence of control information as disclosed by Gotoh, the motivation being to decrease delay time for playback by shortening the reproduction of the control information.

Regarding claim 70, Minamino and Deng disclose all of the limitations of claim 57 as discussed in the claim 57 rejection above. Minamino and Deng both fail to disclose

the recording medium wherein the information area further includes a third region storing identification information to identify the presence or absence of the control information.

Gotoh et al. discloses a computer-readable recording medium including control information recorded in a control data area (see Figures 30A and 30C), and a particular region containing identification information to identify the presence or absence of the control information (see Figure 30A - note stripe presence/absence identifier 937; see also paragraphs 0242-0245) for the purpose of monitoring the amount of available space to which more control data may be recorded.

It would have been obvious to one of ordinary skill in the art to combine the recording of control information in the lead-in as disclosed by Minamino with the Manchester Encoding scheme as disclosed by Deng, and the recording of information indicating the presence of control information as disclosed by Gotoh, the motivation being to decrease delay time for playback by shortening the reproduction of the control information.

9. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minamino et al. (hereinafter Minamino – US Doc. No. 20030007432) in view of Deng (USPN 5892797) in view of Gotoh et al. (hereinafter Gotoh – US Doc No. 20020089920) and even further in view of Applicant Admitted Prior Art (hereinafter AAPA).

Regarding claim 18, Minamino and Deng disclose all of the limitations of claim 16 as discussed in the claim 16 rejection above. Minamino discloses that the control

information is located in the lead-in of the optical disc (see page 24, paragraph 0395). Minamino fails to disclose a PIC data area and identification information for identifying the presence or absence of the control information.

Gotoh et al. discloses a computer-readable recording medium including control information recorded in a control data area (see Figures 30A and 30C), and a particular region containing identification information to identify the presence or absence of the control information (see Figure 30A - note stripe presence/absence identifier 937; see also paragraphs 0242-0245) for the purpose of monitoring the amount of available space to which more control data may be recorded.

AAPA discloses that control information is recorded in a permanent information & control (PIC) data area of the lead-in zone as defined in Blu-Ray disc (see page 2, paragraphs 0005-0006 in instant specification).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng, the recording of information indicating the presence of control information as disclosed by Gotoh, and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices and to decrease delay time for playback by shortening the reproduction of the control information.

Regarding claim 19, Minamino, Deng, Gotoh, and AAPA disclose all of the limitations of claim 18 as discussed in the claim 18 rejection above. Deng further

discloses that the bit 0 is represented by the transition from low to high in the middle within the predetermined period, while the bit 1 is represented by the transition from high to low in the middle within the predetermined period (see Figure 1, 'Trace 101b').

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the control information storage in the lead-in as disclosed by Minamino with the Manchester Encoding as disclosed in Deng, the recording of information indicating the presence of control information as disclosed by Gotoh, and the PIC area in the lead-in as disclosed in AAPA, the motivation being to comply with industry standards for high density optical storage to ensure maximum playability in a variety of optical disc devices and to decrease delay time for playback by shortening the reproduction of the control information.

Response to Arguments

10. Applicant's arguments with respect to claims 1, 15, 29, and 57 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM R. GIESY whose telephone number is (571)272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 7/27/2009

/Adam R. Giesy/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627